What is claimed is:

1. A plasma-enhanced method of generating nitrogen oxides from air, exhaust gas, a combination thereof, or another gas mixture containing oxygen and nitrogen for generating ammonia as a reducing agent for an exhaust emission control operating according to a Selective Catalytic Reduction process in an internal-combustion engine in a mobile system, comprising:

heating a fuel gas in a gas discharge to a temperature above 2,000 K, wherein a mass flow of the fuel gas is low compared to a mass flow of an exhaust gas of the internal-combustion engine;

exciting molecular nitrogen and oxygen by non-thermal plasma-induced impact processes with high energy electrons to cause electronic excitation, dissociation, ionization, or a combination thereof to produce electronically excited molecules, molecule fragments, ions, or a combination thereof; and,

forming one or more oxides of nitrogen by reaction of the electronically excited molecules, molecule fragments, and ions, or combination thereof, wherein a concentration of the one or more nitrogen oxides generated by the gas discharge plasma is from about 2% to about 5%

2. The method of Claim 1, wherein the mobile system is a motor vehicle.

3. The method of Claim 1, wherein the fuel gas is heated in the gas discharge to a temperature above 2,800 K.

4. The method of Claim 1, wherein reaction times of formation processes for forming the nitrogen oxides are maintained from about 1 μs to about 10 ms based on the gas temperature, rates of formation of the excited molecules and molecule fragments, or a combination thereof.

5. The method of Claim 1, wherein the NO formed in the hot fuel gas is chemically stabilized by a rapid cooling at a rate of from about 10,000 K/s to about 100,000 K/s, to a temperatures below about 1,500 K.

6. The method of claim 5, wherein the hot fuel gas is cooled to a temperature below about 1,000 K.

7. The method of Claim 1, wherein the gas discharge plasma fluctuates with respect to space, time, or a combination thereof.

8. The method of Claim 7, wherein the specific energy density of the gas discharge plasma is from about 1 kJ/m^3 to about 50 kJ/m^3 in the gas discharge volume.

9. The method of claim 8, wherein the specific energy density of the gas discharge plasma is from about 2 kJ/m^3 to

about 10 kJ/m^3 in the gas discharge volume.

10. The method of Claim 8, wherein a flow rate of the fuel gas flowing into the gas discharge plasma is from about 10 m/s to about 50 m/s, and a flow rate after acceleration is from about 100 m/s to about 500 m/s.

11. The method of claim 1, wherein rotating arcs are used for generating the gas discharges.

12. The method according of Claim 1, wherein gliding arcs are used for generating the gas discharges.

13. A system for plasma-enhanced generation of nitrogen oxides from air, exhaust gas, a combination thereof, or another gas mixture containing oxygen and nitrogen for generation of ammonia as a reducing agent for an exhaust emission control operating in a Selective Catalytic Reduction process in an internal-combustion engine in a mobile system, comprising:

a plasma reactor having an inlet for a fuel gas and an outlet for a process gas;

an electrically insulated pin electrode as a high-voltage electrode disposed in the plasma reactor;

a grounded counterelectrode having a centric hole of a first diameter disposed in the plasma reactor; and

a plasma zone situated between the electrodes.

14. The system of Claim 13, further comprising a back space in the plasma reactor behind said hole electrode for cooling the discharge plasma.

15. The system of Claim 14, wherein gas can exit into the back space of said hole electrode from the plasma zone formed between the two electrodes.

16. The system of Claim 15, wherein the gas outlet is situated in the back space of said hole electrode.

17. The system of Claim 13, wherein said hole electrode has a planar construction and wherein the first hole diameter and thickness of said hole electrode are variable.

18. The system of Claim 13, wherein said hole electrode has a profile at least toward the back space, the thickness of said hole electrode being defined by the slope of the profile.

19. The system of Claim 13, wherein said hole electrode has a nozzle-type shape.

20. The system of Claim 13, further comprising a baffle plate arranged in the back space of said hole

electrode.

21. The system of Claim 13, further comprising a recirculation tube provided in the back space of said hole electrode.

22. The system of Claim 13, wherein the plasma reactor further comprises an inlet for a quench gas.

23. The system of Claim 13, wherein the inlet for the quench gas is arranged in the back space of said hole electrode.

24. The system of Claim 13, wherein the inlet for the quench gas is arranged radially in said hole electrode.

25. The system of Claim 13, further comprising devices for preheating the fuel gas disposed in the plasma reactor.

26. The system according to Claim 25, wherein the devices heat exchangers that exchange heat with a product gas.

27. The system of Claim 13, wherein the plasma reactor is configured to produce a gas discharge plasma that fluctuates with respect to space, time, or a combination thereof.

28. The system of Claim 13, wherein the plasma reactor further comprises a high voltage direct-voltage source, pulse voltage source, or alternating-voltage source for generating the plasma.

29. The system according to Claim 28, wherein a frequency of a pulse direct voltage or a frequency of an alternating voltage is from about 50 Hz to about 1 MHz.

30. (New) The system according to Claim 29, wherein an impedance of the voltage source at said frequency is from about 1 kΩ to 10 kΩ.